

## ABSTRACT

The charging voltage measuring device includes a measuring electrode for forming an electrostatic capacity  $C_s$  with a substrate disposed on a substrate holding unit, a 5 measuring capacitor, which has an electrostatic capacity  $C_m$ , being connected between the measuring electrode and a ground potential portion, and, a voltage measuring unit for measuring a measuring voltage  $V_m$  across the measuring capacitor, and a calculating unit. The calculating unit 22 calculates the 10 charging voltage  $V_s$  on the surface of the substrate at time  $t_1$  in accordance with the following numerical expression on the basis of the measuring voltage  $V_m(t_1)$  at time  $t_1$ , an inverse  $K$  of a voltage dividing ratio and a resistance value  $R_m$  of a resistor disposed in parallel to the measuring capacitor 18, 15 when the measurement time is  $t_1$ .

$$V_s = K[V_m(t_1) + \{1/(C_m \cdot R_m)\} \int_0^{t_1} V_m(t) dt]$$

where  $K = (C_s + C_m)/C_s$  or  $K = C_m/C_s$  (if  $C_m \gg C_s$ )